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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/509,428	06/09/2000	MATS LEIJON	705/72341-2	9546

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EXAMINER

ENAD, ELVIN GENARGUE

ART UNIT PAPER NUMBER

2834

DATE MAILED: 11/27/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/509,428

Applicant(s)
Leijon et al.

Examiner
Elvin Enad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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DETAILED ACTION

Information Disclosure Statement

1. Receipt is acknowledged of the information disclosure statement papers filed on June 9, 2000 and January 01, 2001. The papers have been placed in the application file. A signed copy of the IDS will be provided when the application is allowed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support for the limitations pertaining to the conductive elements being in electrical contact with one another (claim 7) and to the layers being fixed to adjacent layers essentially a whole contact surface therebetween (claim 8).
4. Claim 8, 14 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 8, the meaning of the limitation pertaining to the layers being fixed to adjacent layers along "essentially" a whole contact surface therebetween is vague and indefinite.

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Regarding claim 14, the meaning of a “rotating stator winding” is confusing and appears to be incorrect since the stator is always the stationary member of a motor/generator.

In claim 32, the use of the rotating electrical machine in an electric power plant according to claim 1 is incomplete and cannot be determined.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5,7-32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lauw (USP 5,239,251) in view of Elton et al. (USP 5,036,165).

Lauw discloses the claimed invention except for having a winding for the electric rotating machine winding comprised of at least one semiconducting layer. Lauw discloses a variable speed drive comprising a brushless doubly-fed motor which operates in both synchronous and induction modes at infinitely variable speeds, a power electronic converter, a drive controller and associated method for controlling the motor advantageously resulting in a variety of enhanced operational performance characteristics. The AC variable speed drive controller is provided for controlling the AC variable speed drive driving a load. The speed drive controller comprises receiving means for receiving a power sensor signal produced by a power sensor which senses a parameter of the

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power received by the motor from the grid and produces the power sensor signal which corresponds to the sensed parameter. The controller also includes reference means for establishing a reference signal according to a desired motor operation strategy. Further, the controller includes processing means for processing the received power sensor signal and the reference signal and generating therefrom a controller signal. The controller signal is received by the power electronic converter which produces the excitation power at an excitation frequency in response to the controller signal so as to drive the load according to the desired motor operation strategy irrespective of variations in the load, by controlling the excitation power received by the second stator system of the motor.

The brushless doubly-fed machine is comprised of a single-frame machine having a squirrel-cage rotor, a stator with stator windings comprising first and second polyphase stator systems. The first and second stator systems are either physically separate windings on the stator, or the first and second stator systems share common windings. With common stator windings shared between the first and second stator systems, different currents or voltages having different frequencies are applied to the terminals of each stator system. The variable speed drive also includes converter means for receiving and converting power from a converter power source in response to the received controller signal. The converter means is also provided for producing excitation power at an excitation frequency, and for injecting the excitation power from the converter means into the second stator system.

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Elton et al. ('165) teach having an electrical cable provided with an internal grading layer of semi-conducting pyrolyzed glass fiber layer in electrical contact with a cable conductor. In an alternate embodiment, Elton et al. disclose an electrical cable provided with an exterior layer of internal grading layer of semi-conducting pyrolyzed glass fiber layer in contact with an exterior cable insulator having a predetermined reference potential. Furthermore, note that Elton et al. teach that it is known to provide a semiconducting layer in the insulation of a conductor and to connect that layer to a fixed potential in order to provide an equipotential surface on the conductor preventing corona discharge around the conductors.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the cable winding as taught by Elton et al. to the rotating electric machine of Lauw since such a modification according to Elton et al. would prohibit the development of corona discharge. Elton et al. further teach in column 2, lines 42-48 that having a semiconducting layer would bleed off any static electric discharge or electric discharge developed on the exterior surface of the insulation.

7. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lauw (USP 5,239,251) in view of Elton et al. ('165) and further in view of Elton ('116).

Lauw and Elton et al. ('165) disclose the claimed invention except for a teaching that the semiconducting layers have the same coefficients of thermal expansion.

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Elton ('116) teaches that it is well known to form different overlapping insulations with the same coefficient of thermal expansion in order to prevent thermal stress to separate and crack the materials to cause failure of the insulation (see lines 38-44, col.7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the semiconducting layers and insulation of Lauw and Elton et al. ('165) such that the different layers of insulation had similar or the same coefficient of thermal expansion, as disclosed by Elton ('116), in order to prevent failure caused by thermal aging and cycling.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elvin Enad whose telephone number is (703) 308-7619.
9. Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956. The fax phone number for this Group is (703) 305-3431 (32).



Elvin Enad
Primary Examiner
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11.08.2001